

Abstract of the Disclosure

Methods and systems for treating a waste stream in a waste treatment system involve performing a unit process of the waste treatment system by contacting the waste stream with oxyhydrogen-rich gas generated on-site by an oxyhydrogen gas generator that implements water dissociation technology. In a preferred embodiment, the oxyhydrogen gas generator involves applying a pulsed electrical signal to a series of closely-spaced electrodes that are submerged in the waste stream to produce oxyhydrogen-rich gas from a water component of the waste stream. Operation of the oxyhydrogen gas generator in the waste stream may accomplish one or more unit processes for waste treatment, such as conditioning, stabilization, thickening, and dewatering, among others. At least a portion of the oxyhydrogen-rich gas can be conveyed for a second use in the waste treatment system, such as a source of combustible fuel for incineration or power generation, for example.